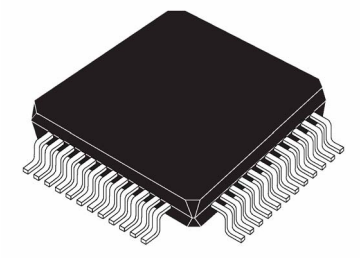
STV6437B

Audio/video buffer for single SCART and HD output

Data brief

Features

- I^2C bus control
- Video section:
  - Selectable 7-MHz/30-MHz, low-pass filters, plus bypass, on three encoder video inputs
  - 7-MHz low-pass filters on six encoder video inputs
  - DC-coupled inputs
  - Each output is capable of driving an AC- or DC-coupled, 150-Ω video load at 3 V pp and CVBS output can drive a dual 75-Ω video load
  - Selectable gain of 6 or 12 dB for each channel
  - Selective video output muting
- Audio section:
  - Stereo sound capability
  - Differential or single-ended audio inputs
  - Audio outputs drive 2-kΩ loads at 3 V RMS
  - Selectable audio gain of 0 to 28 dB
  - Audio output muting
  - 9 V to 12 V single supply operation
  - Click-noise suppression management
  - Pop-noise suppression management
- Low power mode
  - Audio/video standby function



TQFP48 EPD 7 × 7 × 1 mm^3
(48-pin thin quad flat pack with exposed pad down)

Applications

- Set-top boxes (IP, cable, satellite, terrestrial)
- Integrated digital TV plug-in
- Blu-ray and DVD players

Description

The STV6437B is a fully integrated solution for filtering and buffering standard- and high-definition signals, and buffering stereo audio signals from the MPEG decoder of a digital receiver, Blu-ray or DVD player, or iDTV plug-in.

The STV6437B is an assortment of switches and low-pass filters (three HD/SD filters and one SD filter) with output buffers and a dual audio amplifier that operates with either differential or single-ended inputs.

Table 1. Device summary

Order code	Temperature range	Package	Packaging
STV6437BH	0 to 70 °C	TQFP48 (7 × 7 mm^2) EPD	Tray
STV6437BHT	0 to 70 °C	TQFP48 (7 × 7 mm^2) EPD	Tape and reel

For further information contact your local STMicroelectronics sales office. www.st.com

1 Introduction

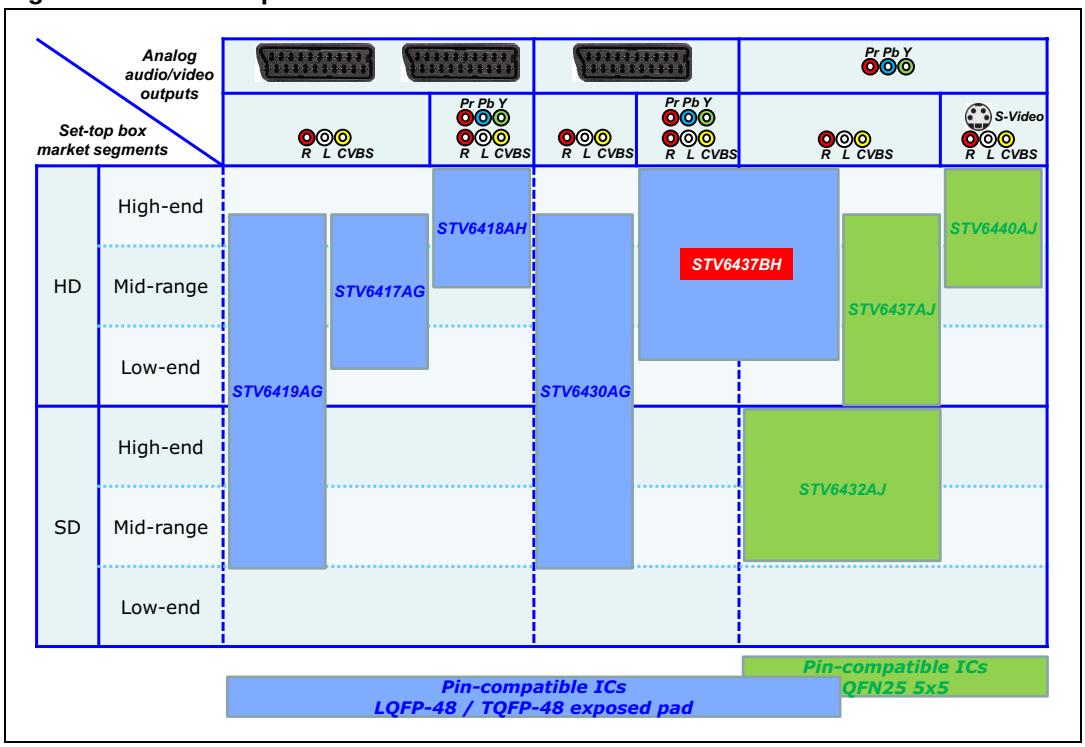
The STV6437B is an I²C-controlled integrated circuit for filtering and buffering audio and video signals in any single-SCART or non-SCART application with HD component output. It can be used in products such as HD set-top boxes or DVD/BD players and recorders for world-wide markets.

It can be connected to six video DAC outputs of an MPEG decoder, allowing simultaneous switching and driving of either the composite and RGB signals, or S-video/composite signals, to the TV SCART output, and the HD component output to RCA HD sockets. The STV6437B manages the slow blanking and fast blanking signalling through the I²C bus.

The STV6437B is one of the family of five, pin-compatible products (Figure 1) that complete the new generation of audio and video switches and buffers from STMicroelectronics. Together they cover, both technically and price-wise, the whole market spectrum from mid-range SD retail (zapper set-top boxes or basic recorders) up to DVR HD operators (set-top boxes or recorders with HD component output).

Features	Benefits
Integrated switch from RGB/composite SCART to S-video SCART.	Avoids change of output configuration for video DACs.
Three selectable SD/HD filters and six independently-mutable RGB and component output buffers.	Allows suppression of either SD/HD component output or SD SCART output when both are connected to the TV.
DC-coupled video inputs.	Reduces component count.
AC- and DC-coupled high-drive capability video outputs (for 70-Ω (minimum) loads).	Connects to any type of display and drives several composite and RF modulator outputs without external active components.
Fixed-gain video buffers selectable as 6 dB or 12 dB.	Makes the device future-proof for next generation of SoC, with ever-finer technology and lower video DAC supplies.
Smart pop-noise manager.	Allows silent swap between active and standby modes.
Selective standby command for audio or each individual video output.	As low as 1-mW standby consumption supporting compliance to 0.5-W standby requirements.
8-step selectable audio gain up to +28 dB, supporting output of 3.1 V RMS (minimum).	Easy fine-tune of THD and SNR depending on requirements, whilst matching any specific audio output level, including China Cable, and saving external op-amps.
Pin-compatibility with four other products.	Combines single-device space-saving (up to 50%) benefits with commodity price/flexibility benefits to allow a single PCB design covering the entire market spectrum.
Pin-compatibility with STV6418AH.	Provides dual-source solution at no cost premium in case of market shortage or sudden rise in demand.

Figure 1. Pin-compatible devices



2 Revision history

Table 2. Document revision history

Date	Revision	Changes
04-Aug-2011	1	Initial release.

Please Read Carefully:

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST’s terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN ST’S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS EXPRESSLY APPROVED IN WRITING BY TWO AUTHORIZED ST REPRESENTATIVES, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER’S OWN RISK.

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2011 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com